

Chapter 1 Thinking Like an Economist

Chapter Summary

The title of this chapter is "Thinking Like an Economist," and the chapter gets students to think about economic problems from the start. The text begins by explaining the notion of scarcity and choice; it makes clear that time and money are not the only scarce resources. The concept of choice leads directly to the weighing of marginal costs and marginal benefits. The answer to the question, Should I do activity X? is: if the benefits of that activity are greater than the costs [if $B(X) > C(X)$], then do X; otherwise don't. Understanding the importance of marginal analysis is central to sound economic reasoning.

From here, the chapter points out the pitfalls that are likely when making decisions: ignoring opportunity costs, failing to ignore sunk costs, and focusing only on some of the relevant costs. A number of examples are presented.

The next few sections – "The Invisible Hand," "Rationality and Self-Interest," and "Would Parents Want Their Daughter or Son to Marry Homo Economicus?" – develop the notion of rationality and the rational economic person, pointing out some different approaches to rationality (e.g., the present-aim versus the rational choice self-interest standard).

The chapter concludes with a discussion of positive and normative economics and the distinction between microeconomics and macroeconomics.

Chapter Outline

Scarcity and Choice

The Cost-Benefit Approach to Decisions

A Note on the Role of Economic Theory

Some Common Pitfalls in Decision Making

1. Ignoring opportunity costs
2. Failing to ignore sunk costs
3. Focusing on only some of the relevant costs

The Invisible Hand

Rationality and Self-Interest

Would Parents Want Their Daughter or Son to Marry Homo Economicus?

The Economic Naturalist

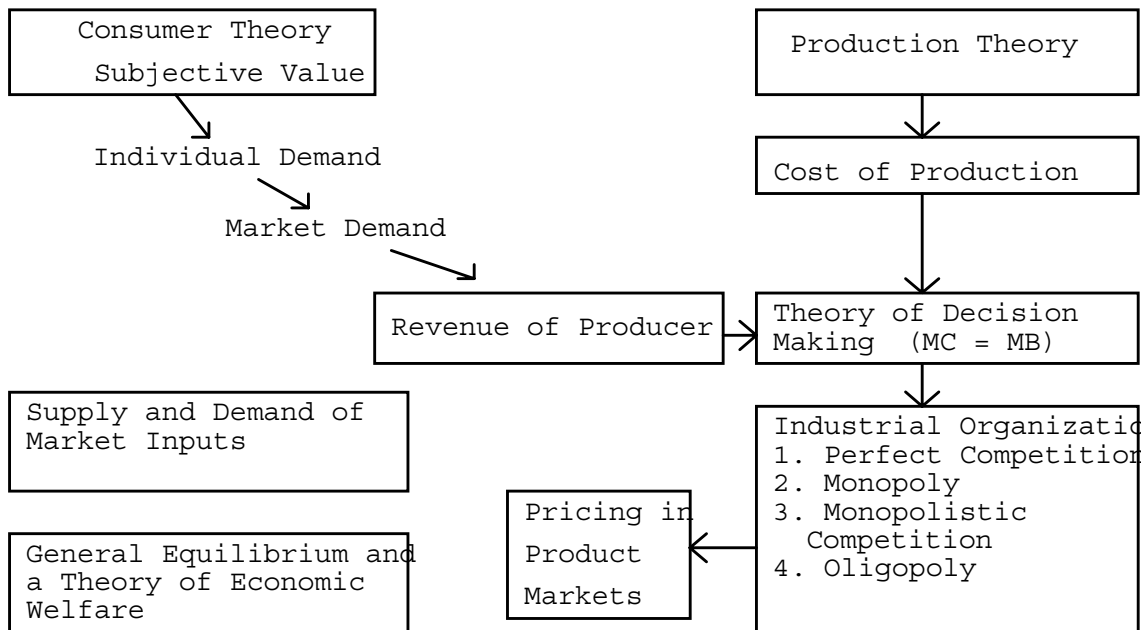
Positive Questions and Normative Questions

Microeconomics and Macroeconomics Summary

Teaching Suggestions

1. Begin the term with a view of the "forest"—the course seen as a whole. It is very easy to get lost in the "trees" of individual topics, especially when it takes three weeks to derive a demand curve. I like to use a flow-chart which I come back to at various times during the term to make sure students know where we were and where we are going next. The chart below is an example of what might work.

The Forest and the Trees



2. One of the strengths of the Microeconomics and Behavior book is its recognition that economic thinking does not predict as much human behavior as the "rational choice" stereotype might have students believe. This means that the methodology of economics is very important to understand. I find it important to stress at least three very important assumptions of the rational choice model.

- a. Behavior is not random.
- b. People have reasonably simple objectives common to most.
- c. People behave rationally without regard to emotions that detract from rationality.

Where these givens are not present, the rational choice models will fail. To emphasize this point I set up a game with the students where they each have a partner. I pretend to have a lottery machine with seven ping-pong balls numbered 1,1,2,2,3,4,5. One student in each pair will pick a number from one to five, and then the other student will pick a number from the same set of numbers. I then pick a ball, and the student with the closest number to the one picked will get 100 fictitious dollars (real dollars for rich departments). If the students are equidistant from the selected ball or pick the same number, they will split the 100 dollars evenly.

A rational choice model will predict that both students will pick a 2 because the expected value of the 2 is \$50, which is higher than the expected value of any other option. For example, everyone should predict that their partner will pick a 2, so a 1 would bring an expected return of $2/7$ of \$100 or \$28. If a 3 is picked, the probability of winning is $3/7$ or

still less than \$50. Consequently each should pick number 2. It is interesting when the numbers are tallied because invariably some, usually a minority, pick numbers other than 2. The issue now becomes, why did the model predict incorrectly for those people? Students either must have uncommon objectives or are irrational. A discussion follows where students admit they were irrational (could not calculate the expected value right in the time allotted) or had objectives like (a) they wanted their partner to have the most money, or (b) they were risk lovers and hoped to win a long shot and get the entire \$100. This discussion points out the risk aversion assumption underlying rational choice theory, as well as the notion that uncommon objectives and irrationality are not as rare as we may sometimes think.

If time permits, it is helpful to have the students read Friedman's classic methodological article and then rate this ping-pong model on the characteristics of robustness, simplicity, and fruitfulness. Point out that the normative-positive distinction is not as clear as it is sometimes made out to be. There are value-laden issues underlying the assumptions of the model in the first place.

Stumbling Blocks for Students

1. Economists assume that students really want to "think like economists." Far better to assume that they will have to be convinced that such thinking is important. All of the examples in this chapter are showing not only how economists think, but why students may want to think that way also. Doesn't the mind work all this out unconsciously? Can't I trust my gut feeling about whether I should go skiing or not? Are we simply predicting the obvious? Point out that counter intuitive outcomes in economic thinking are plentiful.
2. Cost-benefit analysis of daily events seems too mechanical to most students. Everyone has enough Veblen in them to feel put off by the quantification of quality of life trade-offs. Perhaps they might understand a bit when they consider how carefully they analyze decisions like marriage, religion, and occupation. On what basis do the students decide whether or not they should buckle their seat belts?
3. It is not immediately obvious to most that there is a vast difference between marginal and total or average analysis. The definitions will need to be illustrated with many examples. Later on when production and cost topics are studied the rewards of working with marginal analysis here will pay off.
4. Be sure to clarify what a reservation price is. It is not a household word to students since each customer pays the same price for a commodity in single price markets. The concept is helpful later when consumer surplus and welfare are considered.

Answers to Questions for Review

1. The opportunity cost of reading a novel this evening is not being able to do whatever you would have done instead. If you would have watched TV, then your opportunity cost is not watching TV; if you would have studied economics, then your opportunity cost is not studying economics.
2. The self-interest standard of rationality assumes that people are selfish and do not consider the effect of their actions on others. The present aim standard is more broadly focused. It simply states that people can have goals that come from a wide variety of motivations and that these goals are pursued in the most efficient possible way. The present aim standard allows for altruism and other types of behavior that the self-interest standard explicitly rejects.

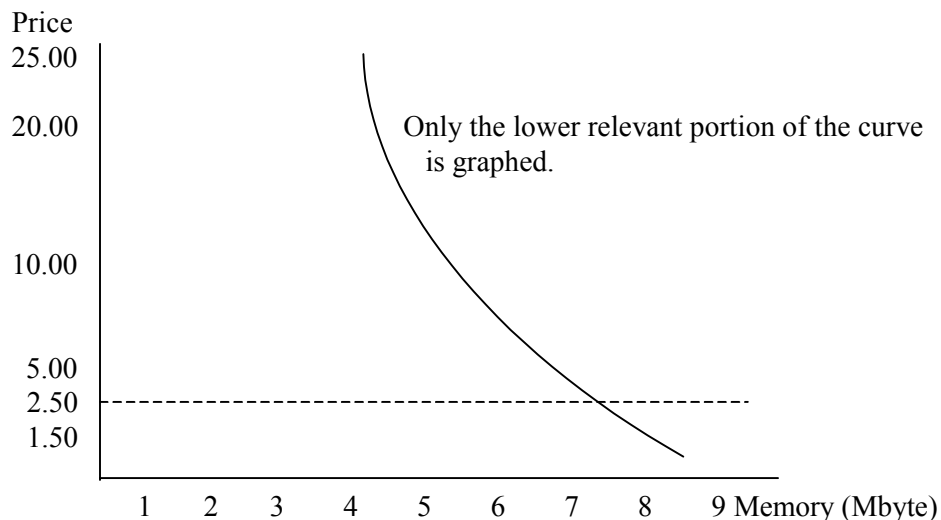
3. Driving an automobile (which pollutes the atmosphere) imposes an external cost on others. Building a house which others admire presents an external benefit. Inventing something which is new and useful but which cannot be patented presents another external benefit.
4. The self-interest model predicts that people will not vote in large elections since the probability that one vote will sway the election is extremely small. However, if one believes that voting is a civic obligation, then this belief may outweigh one's self-interest.
5. By definition, a sunk cost is a cost that is incurred regardless of one's current decisions.
6. Economists generally argue that people act in their own self-interest even if they do not consistently evaluate costs and benefits. The analogy most frequently used (from Milton Friedman) is that of a pool player who knows how to sink his shots without having studied physics.

Answers to Chapter 1 Problems

1. Let $\$X$ be the amount Jamal earns in a day on his job. The cost to Jamal of going to the park is then $\$15$ (admission fee) + $\$5$ (gas & parking) + $\$10$ (the lost satisfaction from not working) + $\$X$ (lost salary) = $\$30 + \X . The benefit of going to the park is $\$45$. He should go to the park if his salary is $\$10/\text{day}$, and shouldn't go if his salary is $\$20/\text{day}$. At a salary of $\$15/\text{day}$, he is indifferent between going and not going.
2. If Tom kept the $\$200$ and invested it in additional mushrooms, at the end of a year's time he would have an additional $\$400$ worth of mushrooms to sell. Dick must therefore give Tom $\$200$ of interest in order for Tom not to lose money on the loan.
3. It is reasonable to assume that everybody has decreasing satisfaction from each pound of food as consumption level increases. In University A, everybody will eat until the benefit from eating an extra pound of food is equal to $\$0$, since this is the cost of each pound of food. In University B, people will eat until the benefit decreases to $\$2$. Thus, everybody will eat less if they are at University B. So, not just average consumption but also each individual's personal consumption will be lower. Note that to reach this conclusion we need the assumption that the students at both universities have the same appetites.
4. The only costs that vary with mileage are fuel, maintenance, and tires, which average $\$0.25/\text{mile}$. The cost of driving will thus be $\$250$, and since this is less than the cost of the bus, you should drive.
5. The band and hall rental fees are fixed costs. The caterers charge at the rate of $\$7/\text{guest}$ ($\$5$ catering bill/ $\$2$ drink). So an extra 10 guests will increase total costs by only $\$70$.
6. The Buick will consume 250 gallons, while the Toyota will use only 100. The total cost of the Buick is thus $\$200 + \$250 = \$450$. The corresponding total for the Toyota is $\$400 + \$100 = \$500$, so you should drive the Buick.
7. Bill has already bought his ticket, so his cost-benefit calculation when it is time to go is as follows: benefit of seeing game vs. cost of the drive + time costs, etc. Joe, not having bought his ticket, faces a different calculation: benefit of seeing game vs. $\$30 +$ cost of the drive +

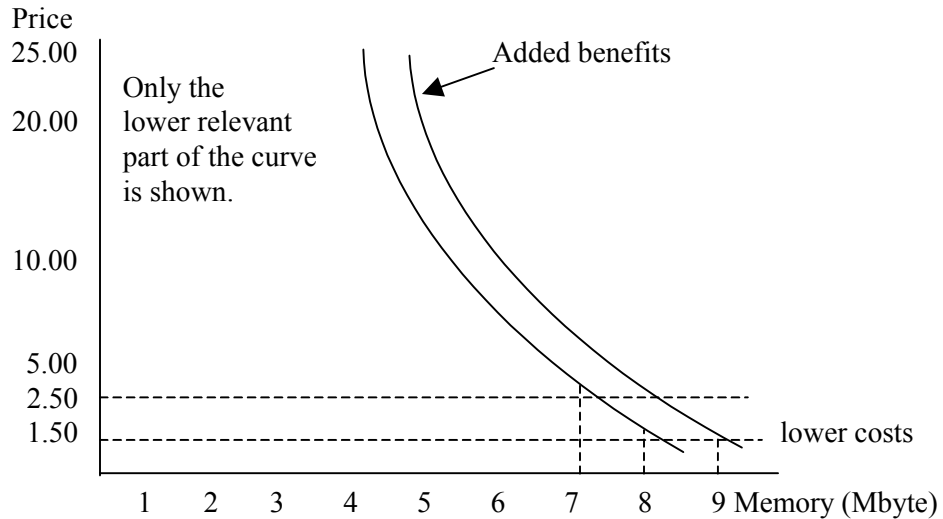
time costs, etc. Since the benefits are the same in each case, but the costs are larger for Joe at the moment of decision, he is less likely to go.

8. A plane of either type--large or small--should use the state-of-the-art device if the extra benefits of that device exceed its extra costs. Because the device will save more lives in large planes than in small planes, its benefits are larger in large planes than in small ones. Your original recommendation was presumably based on the calculation that the benefits for the larger planes justified the extra cost, but did not do so in the case of the smaller planes. Airline passengers are like other people insofar as their willingness to invest in extra safety is constrained by other pressing uses for their scarce resources. Where extra safety is relatively cheap, as in large planes, they will rationally choose to purchase more than when it is relatively more expensive, as in small planes.
9. With more than a week to go, the \$100 driver's fee and the \$50 bus cancellation fee are sunk costs. If the trip takes place, the additional costs will be the remaining \$450 of the bus fee plus the \$75 in tolls, for a total of \$525 in additional costs. If at least 30 tickets will be sold, it makes sense to continue the trip, since total revenue (\$540) will exceed the additional cost.
10. Assuming that residents are required to recycle cans, they simply cannot put them with the regular trash. In the first case, the fixed cost of \$6/week is a sunk cost. Therefore, for the residents, the cost of disposing an extra can is \$0. In the tag system, the cost of disposing an extra can is \$2, regardless of the number of cans. Therefore, since the costs are higher and the benefit of setting out a can is assumed to be the same in both cases, you expect less cans to be collected in the tag system.
11. The benefit of the 1st megabyte is \$200, the 2nd is \$100, the 3rd is \$50, the 4th is \$25, the 5th is \$12.50, the 6th is \$6.25, the 7th is \$3.125 and the 8th is \$1.5625. You should purchase 7 megabytes. At higher levels, the benefit is less than the cost. At lower levels, benefit exceeds the cost. To buy 8 megabytes would lower total net benefit.



12. When the price falls, you consume 8 MB (rather than 7 MB at the higher price.) When your benefit rises also, you consume 9 MB of RAM.

Problem 1-12



13. False. The fact that she would have chosen the party before she bought her ticket means that she prefers a party to an event that costs \$40. Now her choice is between two events that she can attend with no further payment.

14. False

	<u>Ani DiFranco</u>	<u>Dave Matthews</u>
Benefit	B_p	B_r
Cost (initial)	\$75	\$75
Cost (final)	\$75	\$50

In the problem, we are given that

$$B_p - \$75 > B_r - \$75$$

or

$$B_p > B_r \quad (*)$$

Now, we need to find out whether the following is true or not:

$$B_p - \$75 > B_r - \$50$$

which is the same as

$$B_p > B_r + \$25 \quad (**)$$

Notice that (*) does not necessarily imply (**). For example, if $B_p = \$80$ and $B_r = \$60$, then (*) holds while (**) does not. So we can conclude that you should not go to the Ani DeFranco concert in the above scenario if you are a rational utility maximizer.

15. Safari provides \$10,001/yr more enjoyment than a business job. \$70,000 = gross benefit of business job salary.

Costs of Business Job

10,000 opportunity cost of loan

50,000 lost salary as safari leader

10,001 lost enjoyment from safari job

\$70,001 total cost of taking of business job > benefit, so don't take the job.

If business salary was >\$70,001/yr, he would have taken it.

16. True. If you got \$15,000 for the Taurus but valued it at least at \$20,000 which you already have shown, and paid that plus \$5,000 more for the Camry, the entire Camry expense would have cost you \$25,000. Since you have already shown that you did not want the Camry for \$25,000, why would you spend that for it now?

Additional Problems

1. Bob has decided to go skiing for the weekend, but (absentminded professor that he is) he has forgotten his skis. He is considering three options: (1) stay indoors and read economics texts; (2) ski for two days and read economics texts one day; (3) ski for three days and forget economics. The costs of skiing are as follows:

Transportation	\$100
Lodging	\$200
Ski pass	\$ 20 per day
Ski rental	\$ 25 per day

Bob has also found out that the resort has a special three-day pass including rental for \$75. Assume that Bob has already reached the ski slopes and that he cannot cancel his room reservations.

- What are the costs of the three options?
 - What is the cost of skiing a third day?
 - Suppose Bob figures it is worth about \$30 a day for him to ski. What should he do?
2. Joe is a full-time student who moonlights at night washing dishes. He makes \$6 an hour after taxes, but he's decided that his nocturnal activities are hurting his grades. He figures that by studying two extra hours a week he could raise his grade in economics from a B to an A next semester. If a semester is 15 weeks long and if Joe is unwilling to give up any other activities, how much will his A cost?
3. Barbara and Zella hope to go to Miami Beach for spring break for seven days. Since both are rational economic women, they have calculated the costs of flying vs. driving.
 Flying: Airline ticket is \$150 per person, and a car rental is \$25 per day.
 Driving their own car: Gas is \$100, lodging to Miami Beach and back is \$150 for a double room, and wear on the car is \$200.
- Which option costs less?
 - Zella also says that she hates driving. Should one include this distaste as a cost?
4. During the gasoline crunch in the mid and late seventies, the price of gas was kept below the market-clearing price. Often this policy resulted in long lines. Assume two possible states of

the world: (1) Gas costs \$1 a gallon with no waiting; (2) gas costs \$.60 a gallon but one must wait for half an hour to get it.

- a. Trevor Goodwood, an attorney at a prestigious law firm, hates waiting in line. He figures his time is worth \$100 an hour. His gas tank holds 20 gallons. How much does gas cost per gallon in the two scenarios given above? Which would Trevor prefer?
 - b. Howard Outoluck is unemployed and figures his time is worth nothing. He also has a 20-gallon tank. Which option does he prefer?
5. Jack and Jill are going on a date to Funland, a local amusement park which has recently opened. Funland charges \$10 admission to the park plus \$2 for each ride. Each ride requires a 20-minute wait and lasts 10 minutes. Jack and Jill figure that her time is worth \$18 an hour and his is worth \$12.
- a. If they each decide to take ten rides what is the total cost for Jack? For Jill?
 - b. What is the cost of one additional ride for both Jack and Jill?

Answers to Additional Problems

1. a) The opportunity cost of option one is zero since transportation and lodging represent sunk costs. Bob must, however, give up skiing in order to read economics. Option two costs \$75 since the three-day pass is cheaper than the per day rate for two days; in addition Bob gives up one day of studying economics. Option three costs \$75 plus the loss of three days of studying economics.
 1. b) The loss of one day to study economics.
 1. c) Ski all three days since \$75 for three days works out to \$25 a day.
2. $\$6 \times 2 \text{ hr per week} \times 15 \text{ weeks in a semester} = \180 .
3. a) Option one costs $\$300 + \$175 = \$475$. Option two costs \$450.
b) Yes. The savings from option two is only \$25. If Zella is willing to pay \$25 to avoid driving, then they should fly. (Note: Flying will cost Barbara an additional \$12.50; Zella could pay Barbara this amount.)
4. a) Under the first scenario gas costs \$1 per gallon. If Trevor must wait half an hour, then it costs him \$50 plus \$12 for the 20 gallons; his cost per gallon is \$3.10. Thus Trevor prefers to pay \$1.00.
4. b) Howard doesn't mind waiting in line; he prefers to pay \$.60.
5. a) Jack: \$10 admission plus $10 \times \$2$ for each ride plus $\$12 \times 5$ for his time; the total cost is \$90. Jill: \$10 admission plus $10 \times \$2$ for each ride plus $\$18 \times 5$ for her time; the total cost is \$120.
5. b) Jack: \$2 plus $\$12 \times 1/2$ for his time; it costs \$8. Jill: \$2 plus $\$18 \times 1/2$ for her time; it costs \$11.

Answers to Homework Assignment

HOMEWORK ASSIGNMENT

KEY: _____ CHAPTER 1 _____

1. In a paragraph, describe a fictitious case where present-aim rationality is used to explain behavior.

Risk-averse Alex wears a helmet on his bike, always uses his car seat belt, and eats only healthy food. One day his wife found him beating his head against a wall. She, believing that Alex maximizes his self interest, concludes that he would rather beat his head against the wall than sit quietly in the room.

2. Consider the terrorist attacks of September 11, 2001. Can a suicide terrorist be considered rational by rational choice standards? If so, how? If not, what does that mean for anti-terrorist policies?

Since dying is not a goal common to most Americans, suicide bombing is irrational by American standards. Thus we can not effectively predict what terrorists will do nor can we assume that raising the costs of terrorist attacks will prevent such attacks. Since we can not tell a terrorist from a non-terrorist before the behavior is committed and since not wishing to die is more common than suicide, terrorism is a very difficult problem to solve.

3. A recent *Wall Street Journal* article told how nearly all short order food restaurants are going to the single winding queuing line for their customers even though it is less efficient than the self forming series of lines at the counter. Why do you think this economically irrational behavior is occurring?

People are letting emotions and a sense of justice dominate their desire for efficiency. They hate to see someone who came later than they be served first.

4. Find a newspaper clipping which relates to one point of the chapter outline shown in this chapter. Identify which outline point is involved and how the story relates to it.

It should not be hard to find stories of behavior that follow a predictable pattern based on the self interested pursuit of objectives common to most. It pays to be a generous grader on a question like this, particularly early in the term. It might be good to use some questionable answers in class to clarify the point.

Notes: